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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/916,929	07/26/2001	Chris A. Barton	NAIIP014/01.128.01	8771

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EXAMINER	
SCHUBERT, KEVIN R	
ART UNIT	**PAPER NUMBER**
2137	

DATE MAILED: 01/13/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/916,929	BARTON ET AL.	
	Examiner	Art Unit	
	Kevin Schubert	2137	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-37* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-37* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 July 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *09042001*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claims 1-37 have been considered.

Claim Objections

Claims 15 and 31 are objected to because of the following informalities: a grammatical error exists in the phrase "data is meets". Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2,18,34, and 35 are rejected under 35 USC 112, second paragraph.

Regarding claims 2 and 18, the phrase "favorable results" renders the claims indefinite because it is unclear what constitutes a favorable result. The examiner assumes that not detecting malicious code constitutes a favorable result. See MPEP § 2173.05(d). Appropriate correction is required.

Regarding claims 34 and 35, the phrase "unfavorable results" in part j) renders the claims indefinite because it is unclear what constitutes an unfavorable result. The examiner assumes that the detection of malicious code constitutes an unfavorable result. See MPEP § 2173.05(d). Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2,4-14,17-18,20-30, and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Makita, U.S. Patent Application Publication No. 2001/0007120.

As per claims 1,17, and 33, the applicant describes a method for scanning data comprising the following limitations:

a) executing scanning control logic utilizing a central processing unit ([0174] and [0091]);

b) identifying a request related to data at the central processing unit [00174];

c) indicating the data to a scanning co-processor coupled to the central processing unit so that the data is scanned by the scanning co-processor under the control of the scanning control logic ([0174] and [0091]);

d) waiting for results from the scanning co-processor ([0176] and [0177]);

e) executing additional logic utilizing the central processing unit while waiting for the results from the scanning co-processor [0062];

f) initiating an event based on the results from the scanning co-processor ([0176] and [0177]);

The applicant describes an anti-virus scanning system which seeks to solve two problems as listed in the Background of the Invention. The first is to read for malicious code and quarantine it (Page 2), and the second is to alleviate load from the processor by scanning in the subsystem because scanning by the processor "uses up a large proportion of system resources in the form of cycles in the central processing unit" (Page 2). Makita discloses an invention which meets all the limitations of the claims and meets both problems: "by providing the external storage with a virus check means to perform

a virus check on a file to be recorded on a recording medium, it becomes unnecessary for the host computer to perform a virus check, thus reducing a processing load imposed on the host computer" [0062].

Regarding the use of a central processing unit, the primary reference discloses an operating system control unit. The operating system control unit embodies the CPU because it is well known in the art that an operating system runs on the central processing unit. The role of the operating system control unit of the primary reference is identical to the role of the CPU as described in the applicant's invention. The operating system control unit controls the read and write requests which take place between the host computer and the remote storage ([0008] and Fig 4). According to the applicant, the central processing unit issues read and write requests between the computer and the storage (Page 5).

Regarding part a), the scanning control logic is the file management unit which controls the read and write requests from the host computer [0091]. The scanning control logic is executed through the CPU as the CPU instructs the scanning control logic on its read/write requests.

Regarding parts b) and c), data requests to read/write data originate at the OS control unit, or CPU, and are sent to the scanning control logic, or file management unit, which manages the execution of the read/write requests.

Regarding part d), the host computer waits for a result of the scanning which will be whether a virus is present.

Regarding part e), the host computer continues normally while the scanning is done. As stated in the paragraph referenced above, the processing load of the host computer is reduced by the remote virus scanning process but not the host computer is not halted.

Regarding part f), the event which is executed is halting the writing of the virus to storage and notifying the user that a virus has been discovered in the case when a virus is discovered. If a virus is not discovered, the event is writing the virus to storage.

As per claims 2 and 18, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Further comprising processing the data utilizing the central processing unit upon the receipt of favorable results from the scanning co-processor [0177];

As per claims 4 and 20, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic includes hardware (211 of Fig 15);

As one can see from Fig 15, the file management unit, or scanning control logic unit, is a unit segregated from such physical components as an interface (21) to connect with the host computer and memory (212). Also one should note that the file management unit contains memory to store the programs which it includes [0091].

As per claims 5 and 21, the applicant describes the method of claims 3 and 20, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic is stored on the scanning co-processor (Fig 15);

The applicant should note that the external storage (410 of Fig 15) is the scanning co-processor which houses the virus check (413) and the file management unit, or scanning control logic, in addition to some content formatting units.

As per claims 6 and 22, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic includes software [0091];

The applicant should note that the file management unit includes programs.

As per claims 7 and 23, the applicant describes the method of claims 6 and 22, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning control logic is stored in memory [0091];

The applicant should note that the scanning control logic, or file management unit, includes programs.

As per claims 8 and 24, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the event is initiated under the control of the scanning control logic [0176];

The applicant should note that the file management unit (scanning control logic) controls the communication between the host computer and the external storage. Since the external storage notifies the host computer when a virus is discovered, the notification is under the control of the file management unit (scanning control logic).

As per claims 9 and 25, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning co-processor performs content scanning ([0054] and [0055]);

The applicant should note that the primary reference includes the use of content scanning, which is used to determine a format of data and format the data to a user-selected format, and virus scanning, which is used to detect malicious data.

As per claims 10 and 26, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning co-processor performs virus scanning [0175];

As per claims 11 and 27, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein the scanning co-processor includes memory (Fig 15);

The applicant should note that the external storage (scanning co-processor) includes a storage unit (22 of Fig 15) and a recording medium (4 of Fig 15). The applicant should also note that the virus check is described as a program [0062] which signifies that the virus check itself is stored in memory.

As per claims 12-13 and 28-29, the applicant describes the method of claims 11 and 27, which are met by Makita (see above), with the following limitation which is also met by Makita:

Wherein virus signatures are stored in memory [0062];

The applicant should note that the details of the virus check program/unit are not described in great detail. Since code is evaluated and a decision is made as to whether the code is viral, the virus check has a set of virus signatures and a set of rule sets stored in memory in order to analyze and evaluate the code and determine whether it is viral.

As per claims 14 and 30, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Further comprising determining whether the data meets a predetermined criteria [0175];

The applicant should note that the predetermined criteria is whether or not the code is viral.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 16 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makita.

As per claims 16 and 32, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is also met by Makita:

Further comprising queuing additional data to be scanned by the scanning co-processor while waiting for the results from the scanning co-processor [0192];

Makita describes all the limitations of the independent claims. Makita also describes a method for queuing data in an effective or optimized data so that data can be read/written in the most effective way. However, Makita does not disclose that the queuing method takes place while waiting for the results from the scanning co-processor. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to have the optimization process take place while waiting for the results of the scanning co-processor so that the data system is as effective as possible to prevent wasted resources from being used and wasted cycles from taking place on the CPU.

Claims 3,15,19,31,34-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Makita in view of Zuta, International Publication No. WO 98/45778.

As per claims 3 and 19, the applicant describes the method of claims 1 and 17, which are met by Makita (see above), with the following limitation which is met by Zuta:

Wherein the central processing unit is coupled to the scanning co-processor via a bus (Fig 2, Page 14);

Makita describes all the limitations of the independent claims. However, Makita fails to describe the use of a bus which couples the CPU and the scanning co-processor. Zuta describes a system similar to that of Makita's in which a supervisor computer (scanning co-processor) monitors the scanning done by a CPU and interrupts the CPU if a virus is detected. As exhibited in Fig 2 of Zuta, the supervisor computer connects to the CPU via a bus (17 of Fig 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Zuta with those of Makita and couple a CPU to a scanning co-processor through a bus since a bus is a means to transmit data.

As per claims 15 and 31, the applicant describes the method of claims 14 and 30, which are met by Makita (see above), with the following limitation which is met by Zuta:

Wherein the data is sent to the scanning co-processor if it is determined that the data is meets the predetermined criteria (Page 13-15);

Makita describes all the limitations of claims 14 and 30. However, Makita fails to describe the use of having the data meet a predetermined criteria in order to be sent. Zuta describes a system in which data is monitored by the supervisory computer (scanning co-processor). When suspicious behavior is detected, the CPU is halted and the data is sent to the supervisory computer and dealt with. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to incorporate the ideas of Zuta with those of Makita because the combined system could be used to effectively manage data and have data sent for scanning only when suspicious behavior is detected and not every time data is processed.

As per claims 34 and 35, the applicant describes a method for scanning data which is met by Makita in view of Zuta with some limitations which have already been discussed as referenced below:

a) executing scanning control logic utilizing a central processing unit (claim 1a);

b) identifying a request related to data at the central processing unit (claim 1b);

c) determining whether the data meets a predetermined criteria utilizing the central processing unit under the control of the scanning control logic (claim 14);

d) indicating the data to a scanning co-processor coupled to the central processing unit if it is determined that the data meets the predetermined criteria (claim 15);

e) collecting scanning information from memory on the scanning co-processor (Makita paragraph [0091]);

f) scanning the data with the scanning co-processor utilizing the scanning information under the control of the scanning control logic (claim 1c);

g) waiting for results from the scanning co-processor (claim 1d);

h) executing additional logic utilizing the central processing unit while waiting for the results from the scanning co-processor (claim 1e);

i) queuing additional data to be scanned by the scanning co-processor while waiting for the results from the scanning co-processor (claim 16);

j) initiating a security event upon the receipt of unfavorable results from the scanning co-processor (Makita paragraph [0176]);

k) processing the data utilizing the central processing unit upon the receipt of favorable results from the scanning co-processor (claim 2);

Regarding part e), file management unit (scanning co-processor) contains a number of programs which help it manage read/write requests, formatting requests, and virus scanning requests between it and the host computer.

As per claim 36, the applicant describes the system of claim 35, which is met by Makita in view of Zuta (see above), with the following limitation which is met by Zuta:

Wherein the scanning information is updated via a network periodically (Page 12);

Makita in view of Zuta describes all the limitations of the independent claim. Zuta also describes a method whereby scanning information is updated by "reading from a diskette... to update the list of viruses" (Page 12). Since Makita describes a system which takes place in network type environment "in which the storage device is connected to and/or disconnected from each of a plurality of host computers" [0036], it would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Makita with those of Zuta and have a method for updating the scanning information of viruses through the network so that the information does not get outdated and new viruses can be countered.

Claim 37 is rejected under 35 U.S.C. 103(a) as being unpatentable over Makita in view of Zuta in further view of Slotznick, U.S. Patent No. 6,011,537.

As per claim 37, the applicant describes the system of claim 35, which is anticipated by Makita in view of Zuta (see above), with the following limitation which is anticipated by Slotznick:

Wherein the additional logic to be executed and the additional data queued to be scanned are handled utilizing multi-threading algorithms (Col 12, lines 4-18).

Makita in view of Zuta describes all the limitations of the independent claim. However, Makita in view of Zuta fails to disclose the use of multi-threading algorithms. Slotznick describes a system which incorporates the use of multi-threading algorithms for processing information in a secondary background while a main process is going on. It would have been obvious to one of ordinary skill in the art at the time the invention was filed to combine the ideas of Slotznick with those of Makita in view of Zuta and have a multi-threading background atmosphere so that processes can be executed in the CPU while the scanning is going on in another area so that normal computer execution is taking place while virus scanning is taking place without sacrificing performance.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Schubert whose telephone number is (571) 272-4239. The examiner can normally be reached on M-F 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on (571) 272-3868. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Andrew Caldwell

ANDREW CALDWELL
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